G-E Campus News

LIGHTNING TAMERS

ALADDIN had his lamp, and Robinson Crusoe had his man Friday. But they run poor seconds to General Electric's lightning makers, as visitors to the New York World's Fair will see.

For years at the world-famous G-E high-voltage laboratory in Pittsfield, Mass., visitors have seen powerful man-made lightning crash across 30-foot gaps, and power arcs twist and curl their way into the air. But the apparatus does more than produce merely spectacular demonstrations. It makes possible many experiments that provide data for the constant improvement of transmission equipment.

The star of the public demonstrations has been a 10,000,000-volt generator. Now the star has had her face lifted, and the lightning makers have a new streamlined unit. It will be a feature of the G-E building at the New York Fair. Housed in Steinmetz Hall, it will be a tribute to that great G-E pioneer in artificial-lightning experimentation—the late Charles P. Steinmetz.

Karl B. McEachron, Ohio Northern '13 and ex-Test man, noted lightning investigator for General Electric, is in charge of the exhibit. A specially trained group of engineers will assist him in presenting the more than 4000 shows planned for the fair.

MODERN TORTURE

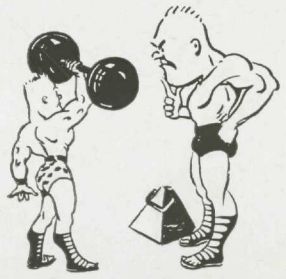
THEY ARE hung by their thumbs, pulled by their toes, and put into furnaces for ten years.

These are the well-organized tortures conducted not by villains of a medieval novel but by G-E engineers. They are the "creep" tests conducted on sample rods of various steels before these steels are used in the manufacture of turbines.

As explained by E. L. Robinson, St. Lawrence, '11, Harvard Engineering School, '14, G-E engineer, the excessive heat under which a turbine operates softens the metal of which it is made, and the metal extends, or creeps. If this creeping exceeds a dimensional change of a hundred-millionth part per hour, or is not symmetrical and uniform, the turbine shell may leak or the speeding rotor may get out of line.

To avoid these troubles, types of alloyed steels that restrict creeping must be used. Therefore, the creep tests. Sample rods are held fast and stretched until they break. They are put into electric furnaces and kept there for as long as 10 years; temperatures as high as 1200 F being maintained. Careful inspection of the results shows whether the steel is of the proper type.

This creep test is only one of the many made on each G-E turbine. For many other engineers—veterans and Test men alike—conduct other exacting tests.



WORLD'S CHAMPION

SITTING complacently on his new throne in the G-E Research Laboratory is the new midget weight-lifting champion. Not only does he completely outclass other contenders, but it seems probable that he will continue to do so for some time.

This champion is the world's most powerful permanent magnet for its size. Even though he weighs only 1/250th of a pound, he is capable of lifting nearly 1500 times his own weight.

The midget is made of a material known as Alnico, introduced by the Research Laboratory as a heat-resisting alloy. Alnico magnets have been used for some time in radios, motors, generators, and other electric equipment, replacing electromagnets, which require current for their operation.

GENERAL ELECTRIC

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